

**REMARKS**

Applicants respectfully request further examination and reconsideration in view of the above amendments and arguments set forth fully below. Claims 19-31 and 48-63 were previously pending in the instant application. Within the Office Action, Claims 19-31 and 48-63 have been rejected. By way of the above amendments, Claims 19, 31, 48-50, 53, 55, 58 and 61 have been amended, Claim 28 has been canceled and new Claims 64-67 have been added. Accordingly, Claims 19-27, 29-31 and 48-67 are now pending in this application.

**Claim Objections**

Within the Office Action, the numbering of the claims has been objected to. The Applicants have adopted the numbering of the claims as stated within the Office Action.

Claims 48-50 have been objected to because of certain informalities. The applicants have amended the claims accordingly. Specifically, Claim 48 now reads –trunk fiber– rather than the typographical error “truck fiber”; Claim 49 now reads –wherein the guide structure is configured to be bent–; and Claim 50 now reads –wherein the input end–, as suggested within the Office Action.

**Rejections Under 35 U.S.C. § 102(b)**

Within the Office Action, Claims 19-21 and 23 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,522,813 to Trelles (hereafter “Trelles”). By the above amendment, the independent Claim 19 has been amended to recite a shielding structure. As discussed in detail below, Trelles does not teach a shielding structure.

Trelles recites a method of treating an elongated blood vessel located in the tissue under the surface of the skin. The method includes the step of irradiating a spot on the surface of the skin with a laser light less than 0.2 mm in diameter and with sufficient power to ablate a hole in the tissue having a depth that reaches the vessel causing it to bleed and coagulate. The step is repeated at multiple spots on the skin along the elongated blood vessel. Trelles does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area.

In contrast to the teachings of Trelles, the present invention is directed to a system for performing laser assisted surgery. The laser system comprises a laser source for generating laser light comprising laser bursts comprising laser pulses and a laser applicator for delivering a portion of the laser light to a target area of tissue. The laser applicator includes an optical fiber

including a trunk optical fiber, an endo-probe coupled to the trunk optical fiber and *a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area*. The shielding structure is illustrated in Figures 5b, 5c and 5d, respectively, reference numerals 515, 525 and 535. As described above, Trelles does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area.

The independent Claim 19 is directed to a laser system. The laser system of Claim 19 comprises a laser source for generating laser light comprising laser bursts comprising laser pulses and a laser applicator for delivering a portion of the laser light to a target vascular tissue area. The laser applicator comprises an optical fiber including a trunk optical fiber, an endo-probe coupled to the trunk optical fiber including a delivery optical fiber with an input end for receiving laser radiation from the trunk optical fiber and a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area. As discussed above, Trelles does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area. For at least these reasons, the independent Claim 19 is allowable over the teachings of Trelles.

Claims 20, 21 and 23 are all dependent on the independent Claim 19. As described above, the independent Claim 19 is allowable over Trelles. Accordingly, Claims 20, 21 and 23 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 19-26 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,984,915 to Loeb (hereafter "Loeb"). Loeb recites a method of percutaneous and subcutaneous treatment of tissue. The method includes the steps of passing a tip of an optical fiber through the skin to the desired treatment area and emitting laser energy at different levels during the skin penetration. The method is specifically directed towards minimally invasive cosmetic and dermatological procedures. Loeb does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area.

In contrast to the teachings of Loeb, the present invention is directed to a system for performing laser assisted surgery. The laser system comprises a laser source for generating laser light comprising laser bursts comprising laser pulses and a laser applicator for delivering a portion of the laser light to a target area of tissue. The laser applicator includes an optical fiber including a trunk optical fiber, an endo-probe coupled to the trunk optical fiber and *a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding*

*the target area.* The shielding structure is illustrated in Figures 5b, 5c and 5d, respectively, reference numerals 515, 525 and 535. As described above, Loeb does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area.

5           The independent Claim 19 is directed to a laser system. The laser system of Claim 19 comprises a laser source for generating laser light comprising laser bursts comprising laser pulses and a laser applicator for delivering a portion of the laser light to a target vascular tissue area. The laser applicator comprises an optical fiber including a trunk optical fiber, an endo-probe coupled to the trunk optical fiber including a delivery optical fiber with an input end for receiving  
10 laser radiation from the trunk optical fiber and a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area. As discussed above, Loeb does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area. For at least these reasons, the independent Claim 19 is allowable over the teachings of Loeb.

15           Claims 20-26 are all dependent on the independent Claim 19. As described above, the independent Claim 19 is allowable over Loeb. Accordingly, Claims 20-26 are all also allowable as being dependent on an allowable base claim.

          Within the Office Action, Claims 19-26 and 28-31 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,738,677 to Colvard (hereafter "Colvard").

20           Colvard recites a method of removing a cataractous lens using an optical probe configured for insertion into the anterior chamber of the eye. The method includes the steps of inserting the optical probe into the anterior chamber of the eye and delivering optical radiation to ablate the cataractous lens. However, Colvard does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area. Within the  
25 Office Action, Figure 5 and reference numeral 106 are cited for showing a structure for shielding light from tissue. The applicants respectfully disagree with this position. Reference numeral 106 refers to a distal portion of a brass ferule housing 102. [Colvard, col. 7, lines 50-52] While Colvard teaches that such a housing prevents fluid and debris from blocking the path of the laser energy, it does not teach shielding tissue surrounding the target area. [Colvard, col. 8, lines 6-11]  
30 In fact, Colvard teaches that the areas surrounding the target tissue (the "acoustic zone") experience significant acoustic-induced damage. [Colvard, Abstract] Colvard does not teach a blocking or shielding element situated to block unwanted laser light emitted from the micro-ball

lens 110. [Colvard, Figure 5] Accordingly, Colvard does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area.

In contrast to the teachings of Colvard, the present invention is directed to a system for performing laser assisted surgery. The laser system comprises a laser source for generating laser light comprising laser bursts comprising laser pulses and a laser applicator for delivering a portion of the laser light to a target area of tissue. The laser applicator includes an optical fiber including a trunk optical fiber, an endo-probe coupled to the trunk optical fiber and *a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area*. The shielding structure is illustrated in Figures 5b, 5c and 5d, respectively, reference numerals 515, 525 and 535. In contrast to Colvard, the shield or blocking structures 515, 525 and 535 are situated partially within a path where unwanted laser light may propagate. As described above, Colvard does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area.

The independent Claim 19 is directed to a laser system. The laser system of Claim 19 comprises a laser source for generating laser light comprising laser bursts comprising laser pulses and a laser applicator for delivering a portion of the laser light to a target vascular tissue area. The laser applicator comprises an optical fiber including a trunk optical fiber, an endo-probe coupled to the trunk optical fiber including a delivery optical fiber with an input end for receiving laser radiation from the trunk optical fiber and a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area. As discussed above, Colvard does not teach a shielding structure coupled to the endo-probe wherein the shielding structure protects tissue surrounding the target area. For at least these reasons, the independent Claim 19 is allowable over the teachings of Colvard.

Claim 28 has been cancelled by the above amendment.

Claims 20-26 and 29-31 are all dependent on the independent Claim 19. As described above, the independent Claim 19 is allowable over Colvard. Accordingly, Claims 20-26 and 29-31 are all also allowable as being dependent on an allowable base claim.

**Rejections Under 35 U.S.C. § 103(a)**

Within the Office Action, Claims 22, 24 and 25 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Trelles in view of Loeb. Claims 22, 24 and 25 are all

dependent on the independent Claim 19. As described above, the independent Claim 19 is allowable over Trelles, Loeb and Colvard. Accordingly, Claims 22, 24 and 25 are all also allowable as being dependent on an allowable base claim.

5        Within the Office Action, Claim 27 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over either Colvard or Loeb. Claim 27 is dependent on the independent Claim 19. As described above, the independent Claim 19 is allowable over Trelles, Loeb and Colvard. Accordingly, Claim 27 is also allowable as being dependent on an allowable base claim.

10        Within the Office Action, Claims 22-24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Colvard in view of U.S. Patent No. 4,309,998 to Aron nee Rosa (hereafter "Aron"). Claims 22-24 are all dependent on the independent Claim 19. As described above, the independent Claim 19 is allowable over Trelles, Loeb and Colvard. Accordingly, Claims 22-24 are all also allowable as being dependent on an allowable base claim.

15        Within the Office Action, Claims 48-63 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Colvard in view of U.S. Patent No. 4,782,819 to Adair (hereafter "Adair"). As discussed above, Colvard teaches a method of removing a cataractous lens using an optical probe configured for insertion into the anterior chamber of the eye. The method includes the steps of inserting the optical probe into the anterior chamber of the eye and delivering optical radiation to ablate the cataractous lens. Colvard does not teach a means to adjust an approach of the delivery optical fiber during use.

20        Adair teaches a sterilizable catheter of small diameter with a central coherent fiber bundle for carrying an image to a viewing means. When the catheter is used inside a larger endo scope, the endo scope can be removed while the catheter remains in place. However, Adair does not teach a means to adjust an approach of the delivery optical fiber during use. Accordingly, neither Colvard, nor Adair, nor their combination teach a means to adjust an approach angle of the  
25        delivery optical fiber during use.

30        In contrast to the teachings of Colvard, Adair and their combination, the present invention recites a laser system comprising a means to generate bursts of laser light comprising laser pulses, means to focus the laser light onto a trunk optical fiber, a flexible endo-probe coupled to the trunk optical fiber, the endo-probe comprises a delivery optical fiber with an input end for receiving laser radiation from the trunk optical fiber and a firing end for exposing a target area of vascular tissue and *means to adjust an approach of the delivery optical fiber to the target area of vascular tissue during use*. As discussed above, neither Colvard, Adair nor their combination teach means to adjust an approach of the delivery optical fiber to the target area of vascular tissue

during use as taught by the present invention. When taken separately or as a combination, Colvard and Adair do not teach or suggest the teachings of the present invention.

5       The independent Claim 48 is directed to a laser system. The laser system of Claim 48 comprises a means to generate bursts of laser light comprising laser pulses, means to focus the laser light into a trunk optical fiber, a flexible endo-probe coupled to the trunk optical fiber and a means to adjust an approach of the delivery optical fiber to the target area of vascular tissue during use. The endo-probe comprises a delivery optical trunk fiber with an input end for receiving laser radiation from the trunk optical fiber and a firing end for exposing a target area of vascular tissue. As detailed above, neither Colvard, Adair nor their combination teach a means to adjust an approach of the delivery optical fiber to the target area of vascular tissue during use. For at least these reasons, the independent Claim 48 is allowable over the teachings of Colvard, Adair and their combination.

10       Claims 49-63 are all dependent on the independent Claim 48. As described above, the independent Claim 48 is allowable over Colvard, Adair and their combination. Accordingly, Claims 49-63 are all also allowable as being dependent on an allowable base claim.

15       Within the Office Action, Claims 59-61 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Colvard and Adair in view of Aron. Claims 59-61 are all dependent on the independent Claim 48. As described above, the independent Claim 48 is allowable over Colvard, Adair and their combination. Accordingly, Claims 59-61 are all also allowable as being dependent on an allowable base claim.

20       New Claims 64-67 are also all dependent on the independent Claim 48. As described above, the independent Claim 48 is allowable over Colvard, Adair and their combination. Accordingly, Claims 64-67 are all also allowable as being dependent on an allowable base claim.

For the reasons given above, the Applicant respectfully submits that Claims 19-27, 29-31 and 48-67 are now all in condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, he is encouraged to call the undersigned at (408) 530-9700 to discuss them so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,  
HAVERSTOCK & OWENS LLP

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By: Jonathan O. Owens  
Jonathan O. Owens  
Reg. No. 37,902

Attorneys for Applicant(s)

CERTIFICATE OF MAILING (37 CFR§ 1.8(a))

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Date: 8-24-05 By: Jonathan O. Owens